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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/032,539 | 01/02/2002 | Toshiharu Yamashita | Q67942 | 5593 |

7590 12/19/2002
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EXAMINER

BOLDEN, ELIZABETH A

| ART UNIT | PAPER NUMBER |
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1755

7

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,539

Applicant(s)

YAMASHITA ET AL.

Examiner

Elizabeth A. Bolden

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-9 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s): _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-7, drawn to polarizing glass composition, classified in class 501, subclass 67.
- II. Claims 8 and 9, drawn to method of making a glass, classified in class 65, subclass 385.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the glass composition can be made by a materially different process such as making the glass by extrusion.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Peter Olexy on 22 November 2002 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-7.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 8 and 9 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tajima et al., U.S. Patent 5,840,096 in view of Yamashita et al., U.S. Patent 3,998,647.

Tajima et al. teach a process for producing a polarizing glass containing oriented shape-anisotropic metallic particles. See Abstract of Tajima et al. Tajima et al. further teach that the metallic particles are formed from the reduction of metallic halides. See Abstract of Tajima et al. Tajima et al. teach the matrix glass for the polarizing process includes silicate glasses, borosilicates, borate glasses and the like. See column 4, lines 28-30. The reference further teaches that the metallic halides are from the following group: silver chloride, silver bromide, silver iodide, copper chloride, copper bromide, copper iodide, as well as gold and platinum halides. See column 4, lines 31-41.

Tajima et al. does not teach specific compositional ranges for the polarizing glass.

Art Unit: 1755

Yamashita et al teach a light sensitive glass comprising in weight percent 48-62 SiO₂, 15-22 B₂O₃, 0-7 Al₂O₃, 0-10 ZrO₂, Al₂O₃+ZrO₂ >6 to <12 %, 6-16 R₂O where R is Li, Na, and/or K, 0.5-7 BaO, 0-2 TiO₂, 0.002-0.03 CuO, and 0.15-1 Ag and more then the Ag equivalent halogens: Cl, Br, and I. See Abstract of Yamashita et al. and specific examples 9-12 and 14-29.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the glass of Yamashita et al. in the process of Tajima et al. because Tajima suggests employing borosilicate glasses, and Yamashita teaches a borosilicate glass composition.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borrelli et al., U.S. Patent 4,304,584 in view of Prassas, U.S. Patent 4,891,336.

Borrelli et al. teach a method for producing a polarizing glass wherein the glass matrix is elongated to elongate and align silver halide particles in the direction of the stress and then the elongated glass undergoes a heat treatment in a reducing environment to reduce the silver halide particles thus resulting in elongated and orientated metallic silver particles. See Abstract of Borrelli et al. The reference teaches that polarization of the photochromic glasses containing silver halide particles is due to the anisotropy of the elongated particles. See column 2, lines 5-11. The reference teaches that the method is effective regardless of the base glass composition of the photochromic as long as AgCl, AgBr, and/or AgI are present. See column 3, lines 36-41. The reference teaches in one embodiment that the base glass to should comprise in weight percent 4-26Al₂O₃, 4-26 B₂O₃, 4-76 SiO₂, and at least one alkali metal oxide from the group of 2-8 Li₂O, 4-15 Na₂O, 6-20 K₂O, 8-25 Rb₂O, 10-30 Cs₂O and silver and a minimum effective

Art Unit: 1755

proportion of at least one halogen. See column 3, line 53 to column 4, line 3. The reference discloses an alternative general base glass which contains in weight percent 5-12 alkali metal oxide, 20-35 B₂O₃, 1-15 Al₂O₃, and SiO₂, and the silver content is not greater than 2%. See column 5, lines 39-47.

Borrelli et al. does not teach specific examples of the composition matching the instant claims. Borrelli et al. does not specifically teach the benefits of the addition of ZrO₂.

Prassas teaches a high index photochromic glass where the base glass comprises in weight percent 33-50 SiO₂, 15-25 B₂O₃, 2-9 Al₂O₃, 1-5 ZrO₂, 1.5-6 Li₂O, 0.3-2.5 Na₂O, 2-9 K₂O, 0-5 MgO, 0-5 CaO, 0-10 SrO, 0-10 BaO, 0-5 ZnO, 2-8 TiO₂, La₂O₃, and 8-16 Nb₂O₅. See Column 2, lines 22-39. The reference teaches that ZrO₂ improves the chemical durability of the glass. See column 3, lines 60-65.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a polarizing glass of Borrelli et al. as suggested by Prassas because the resultant glass would have the reduced metallic silver geometrically anisotropic particles in an oriented state and would have improved durability because of the ZrO₂.

Claims 1-3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borrelli et al., U.S. Patent 4,304,584 in view of Suzuki et al., U.S. Patent 4,794,435.

Borrelli et al. teach a method for producing a polarizing glass wherein the glass matrix is elongated to elongate and align silver halide particles in the direction of the stress and then the elongated glass undergoes a heat treatment in a reducing environment to reduce the silver halide particles thus resulting in elongated and orientated metallic silver particles. See Abstract of

Art Unit: 1755

Borrelli et al. The reference teaches that polarization of the photochromic glasses containing silver halide particles is due to the anisotropy of the elongated particles. See column 2, lines 5-11. The reference teaches that the method is effective regardless of the base glass composition of the photochromic as long as AgCl, AgBr, and/or AgI are present. See column 3, lines 36-41. The reference teaches in one embodiment that the base glass should comprise in weight percent 4-26 Al₂O₃, 4-26 B₂O₃, 4-76 SiO₂, and at least one alkali metal oxide from the group of 2-8 Li₂O, 4-15 Na₂O, 6-20 K₂O, 8-25 Rb₂O, 10-30 Cs₂O and silver and a minimum effective proportion of at least one halogen. See column 3, line 53 to column 4, line 3. The reference discloses an alternative general base glass which contains in weight percent 5-12 alkali metal oxide, 20-35 B₂O₃, 1-15 Al₂O₃, and SiO₂, and the silver content is not greater than 2%. See column 5, lines 39-47.

Borrelli et al. does not teach specific examples of the composition matching the instant claims. Borrelli et al. does not specifically teach the benefits of the inclusion of ZrO₂ and TiO₂ to the base glass.

Suzuki et al. teach a photochromic gradient lens glass where the base glass comprises in weight percent 58.6% SiO₂, 18.6% B₂O₃, 1.5% Al₂O₃, 6.4 ZrO₂, 1.8% Li₂O, 8.1 K₂O, 3.4% BaO, 1.5% TiO₂, 0.006% CuO. See Column 2, lines 53-65.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a polarizing glass of Borrelli et al. as suggested by Suzuki et al. because the resultant base glass with the addition of silver halide particles would be reduced and stretched by the process where the resulting glass has metallic silver geometrically anisotropic particles in an oriented state.

Art Unit: 1755

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Bolden whose telephone number is 703-305-0124. The examiner can normally be reached on 8:30am to 6:00 pm with alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on 703-308-3823. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

EAB
December 10, 2002


DAVID SAMPLE
PRIMARY EXAMINER